

Claims

1. A method for introducing nucleic acid into cells of a region of the human or animal body, which method  
5 comprises substantially occluding an efferent vessel from said body region and introducing said nucleic into that body region under pressure via said efferent vessel.
2. Apparatus for introducing nucleic acid into cells of  
10 a region of the body comprising: a reservoir for holding a liquid formulation which comprises said nucleic acid; a catheter tube in fluid communication with said reservoir for conveying said liquid formulation to said body region via an efferent vessel of said body region; pressure  
15 development means for pressurising the liquid conveyed by the catheter; and occlusion means for substantially occluding said efferent vessel.
3. A method or apparatus as claimed in claim 1 or claim  
20 2 wherein said region of the body is an organ of the body.
4. A method or apparatus as claimed in claim 3 wherein the organ is selected from the list comprising kidney,  
25 heart, spleen, pancreas, lung, adrenal glands, stomach, prostate gland and ovary.
5. A method or apparatus as claimed in claim 4 wherein the organ is the liver.  
30
6. A method or apparatus as claimed in any preceding claim wherein the nucleic acid is introduced at a pressure of, or the pressure development means are adapted to generate a pressure of, 10-80 mmHg.  
35

- 29 -

7. A method or apparatus as claimed in any preceding claim wherein the nucleic acid is in the form of a plasmid.

5 8. A method or apparatus as claimed in any preceding claim wherein occlusion is achieved by or the occluding means comprises one or more balloons.

9. A method or apparatus as claimed in any preceding  
10 claim wherein the nucleic acid is introduced into said region of the body in less than 60 seconds.

10. A method or apparatus as claimed in any preceding claim wherein the liquid formulation comprising said  
15 nucleic acid has a total volume of 50-1300 ml.

11. A method or apparatus as claimed in claim 10 wherein the liquid formulation comprising said nucleic acid has a total volume of 75-350 ml.

20 12. Apparatus as claimed in any one of claims 2 to 11 wherein said reservoir comprises one or more syringe tubes.

25 13. Apparatus as claimed in any one of claims 2 to 12 wherein said pressure development means comprises one or more syringes.

14. Apparatus as claimed in any one of claims 2 to 13  
30 wherein said catheter comprises one or more radial injection ports.

15. Apparatus as claimed in any one of claims 2 to 14 wherein said catheter comprises 2 lumen.

35 16. Apparatus as claimed in claim 15 wherein one lumen is adapted to receive a guide wire.

- 30 -

17. Apparatus as claimed in claim 14 or 15 wherein one lumen is adapted to allow inflation of the occlusion means.

5

18. Apparatus as claimed in claim 16 wherein the liquid formation passes down the guide wire lumen.

19. Apparatus as claimed in any one of claims 15 to 18  
10 wherein the catheter comprises two lumen which are adapted to allow inflation of the occlusion means.

20. Use of a nucleic acid molecule in the manufacture of a medicament for introduction into a region of the body  
15 of a subject, under pressure, and via a substantially occluded efferent vessel of said body region, to treat said subject by gene therapy.